NRC NEWS

U.S. NUCLEAR REGULATORY COMMISSION

Office of Public Affairs Telephone: 301/415-8200

Washington, DC 20555-001 E-mail: opa@nrc.gov

Web Site: http://www.nrc.gov/OPA

S-01-014

Decommissioning, Waste Disposal and Public Confidence in the 21st Century

By

The Honorable Greta Joy Dicus
Commissioner
U.S. Nuclear Regulatory Commission

At the
2001 Annual Meeting of
The Conference of Radiation Control Program Directors

Anchorage, Alaska
May 2, 2001

Good morning. It is always my pleasure to be amongst my dear friends and colleagues from the Conference of Radiation Control Programs Directors (CRCPD) and it is good to see you again. I would like to take this occasion to share with you my thoughts on issues concerning the decommissioning of nuclear facilities.

In my years as a State Regulator and an NRC Commissioner, I have come to know quite well the challenges associated with the decommissioning of nuclear facilities. The issues including Waste Disposal and the Public's concerns. The challenges are complex in nature and contain both technical and policy/political elements.

In my presentation today, I will briefly look back at what has transpired over the past year, but will focus primarily on the prospects for the future. My remarks concentrate on decommissioning and waste disposal issues because those areas present some of the most vexing problems for regulators, licensees and the public alike. I will focus on questions concerning: (1) the elimination of dual regulation of nuclear facilities by

NRC and EPA; (2) the release of slightly contaminated wastes from licensed sites, (3) the disposition of spent fuel and low-level wastes; and (4) public confidence in our decommissioning actions. I have intentionally kept my remarks brief so as to allow time for questions.

The Elimination of Dual Regulation

I know that many of you are aware of, and are interested in, our recent and ongoing interactions with the Environmental Protection Agency (EPA) concerning the elimination of dual regulation in the decommissioning of NRC-licensed nuclear facilities. I will briefly describe the key issues and note the status of these interactions.

It is certainly no secret that the EPA and the NRC have fundamental policy differences on standards to be applied to decommissioning and radioactive waste disposal. The policy differences are long-standing and well-documented. For example, last year's General Accounting Office report on *Radiation Standards*[1] clearly articulates those differences.

I believe it is unfortunate that these matters have remained unresolved because the existence of differences is no doubt having a negative influence on efforts to assure the public that decommissioning can be accomplished in a manner that is protective of public health, safety, and the environment. So, although we are taking steps to build public confidence in our efforts by opening up the regulatory process and becoming more effective in public communication, we are negating these efforts by the perpetuation of policy differences. This is particularly unfortunate because the issues in dispute, in the end, will have minimal impact on public health and safety regardless of how they are resolved. The NRC is aware of the adverse impact that these interagency disagreements are having and we are working diligently with EPA to try and resolve our differences in a mutually acceptable way.

The differences between NRC and EPA reside primarily in two areas: the appropriate dose constraint below the 100 mrem/yr public dose limit and the need and validity of separate groundwater protection requirements. We, as well as many others, continue to believe that the 25 mrem/yr dose limit (plus ALARA) to an average member of the critical group in our license termination rule is fully protective of public health and safety. Although a 25 mrem/yr dose represents a small fraction of potential exposure from naturally occurring radiation in the environment, and is also a quarter of the national and international dose limit of 100 mrem/yr, EPA proposes a lower value, 15 mrem/yr. The difference in the level of protection between the two limits is so small that any difference in public health effects would be undetectable by state-of-the-art epidemiology. Consequently, I do not see our differences with EPA in this matter to be a major health and safety concern. Nonetheless, the difference in limits would have a significant, practical effect on the total costs of decommissioning.

We also disagree with EPA's approach to groundwater protection. EPA seeks to apply certain Maximum Contaminant Levels (MCLs) for radionuclides and other substances that were promulgated pursuant to the Safe Drinking Water Act. We believe that the use of the MCLs is inappropriate for several reasons:

---

[1]General Accounting Office: Radiation Standards, Scientific Basis Inconclusive, and EPA and NRC Disagreement Continues, GAO/RCED-00-152, June 2000.

1) NRC's 25 mrem/yr all-pathway dose criterion means that the dose to a member of the public from all potential exposure pathways, whether it is from air, water, food or direct radiation, would not be permitted to exceed the dose limit for any unrestricted release. This dose limit by itself is not only fully protective of the public's health and safety, but as re-enforced by other existing international recommendations and regulations, provides a consistent risk-based standard by setting consistent risk levels for all potential pathways for exposure. A separate analysis of a single pathway, ground water, to the exclusion of the other pathways is unnecessary.

2) MCLs are drawn from the Safe Drinking Water Act. They were derived to apply to public water supplies after treatment in a public water treatment plant and were never promulgated with consideration of their application to the protection of groundwater supply. In addition, the MCLs are not set at consistent risk levels, raising further questions about the possibility of giving credence to risk-based regulations.

3) MCLs, which are based on a dose limit of 4 mrem/yr, are needlessly conservative. Indeed, the variability in natural background far exceeds this limit.

4) MCLs are based on a 40-year-old science which is scientifically no longer supported by the international radiation protection community. EPA's MCL limit is a dose to an organ and thus is less than a 4 mrem/yr whole-body dose. Although the MCL for iodine-129 was established in the mid-1970s to provide protection at a 4 mrem/yr level, modern dosimetry shows that this MCL in fact yields a dose of 0.2 mrem/yr. EPA, as yet, has not updated its MCLs to reflect current science.

In short, we believe that using scientifically up-to-date dosimetry and applying a uniform risk level in considering the health risks from all radionuclides over all pathways would provide a stronger and more rational basis for decision-making.

As many of you probably are aware, the House of Representatives requested that NRC and EPA enter into a Memorandum of Understanding that clarifies the circumstances for EPA's involvement at NRC sites.[2] To that end, we have been working with EPA to develop an MOU that addresses the key policy issues. Because we believe that it is in the interest of all stakeholders that NRC and EPA reconcile their differences, we have sought to hammer out language acceptable to both agencies outside the glare of a public setting. However, at this time, I cannot predict whether we will be successful. In the end, the agencies may agree to disagree.

Slightly Contaminated Material

I will now move onto the question concerning what is to be done concerning the release from licensed sites of slightly contaminated material that represents no significant public health and safety risk. As it happens, the NRC does not have regulations in place, aside from certain standards for releases to sewers in Part 20, to address the release of contaminated materials from licensed sites. We now handle such matters by way of license conditions and case-by-case consideration.

In June 1999, the NRC published an issues paper in the *Federal Register* to generate discussion about potential alternative courses of action for control of slightly contaminated materials. We indicated an

---

[2] See H.R. Rep. No. 106-286, at 58-59 (1999); H.R. Rep. No. 106-674, at 58.

interest in exploring various options to address the issues, including whether to establish a standard for release by rule. In addition, the NRC held a series of public meetings during the fall of 1999 at four locations around the country to provide further opportunity for public input.

More than 800 written comments were received. Potential recipients of solid material, such as scrap, metals, and cement industry representatives objected to the release of contaminated solid materials. Many commenters noted that there could be a severe economic impact on their industries if consumers were to refuse to buy their products because of concerns over the presence of radioactivity. Citizen groups and individuals expressed concern about health effects of the potential presence of this material in the environment; they indicated that NRC should prohibit the release of any contaminated material, arguing that such material should be isolated from public use.

Congressional concern was also expressed about the release of radioactively- contaminated materials. For example, a year ago Congressman Ron Klink introduced a bill (H.R. 4566) to set standards for radioactive contamination content in the metals industry, to prohibit the release of radioactively contaminated scrap metal by the DOE and by nuclear fuel production, utilization, and fabrication facilities. The legislation required all nations exporting metals into the U.S. to certify and document the amount of radioactive contamination of any scrap metals being exported into the U.S.

The Commission continues to evaluate the input we have received. To aid in our deliberations, we have engaged the National Academy of Sciences to evaluate and provide recommendations on the alternatives for controlling the release of these materials. We intend to wait until that study is complete before making a decision on whether to proceed with a rulemaking. In the meantime, NRC staff will continue development of a technical information base necessary to support a Commission policy decision and will stay informed of international initiatives in this area.

Waste Disposal

The development of disposal options for spent nuclear fuel and decommissioning wastes will present some difficult challenges in the years ahead. The Department of Energy has published its Viability Assessment and the Draft Environmental Impact Statement for a potential repository for disposal of spent fuel and defense high-level wastes at the Yucca Mountain, Nevada site. If it decides to pursue Yucca Mountain as a repository site, the Department is expected to submit its recommendation to the President within the next year with a possible license application to follow in the 2003 time frame.

Within the context of NRC's pre-licensing responsibilities, our staff has completed its review of DOE's siting guidelines (10 CFR Part 963) for a potential Yucca Mountain repository, which is currently before the Commission for review and comment. Staff is also beginning to prepare for the review of the Department's Site Recommendation Consideration Report, which we are expecting to receive no later than mid-summer. Under the Nuclear Waste Policy Act [Section 114 (a)(E)], NRC's comments on this report are to accompany DOE's site recommendation when it is submitted to the President. Assuming that DOE's schedule holds, and the Secretary of Energy decides move forward, DOE will submit its site recommendation to the President in the early part of 2002.

Separate from its pre-licensing reviews, the NRC continues to work on the development of a site-specific regulatory framework for Yucca Mountain as required by the Energy Policy Act of 1992. As you

may know, we are working to finalize our site-specific rule, 10 CFR Part 63, and the accompanying review plan. The NRC received more than 900 comments on its proposed rule, which was issued for public comment in February 1999. The NRC staff has considered these comments, and the draft final rule is currently before the Commission. The staff also is working on the first draft of the Yucca Mountain Review Plan. The development of Part 63 and the associated review plan represent significant challenges for the NRC in that they embody the transition from a largely deterministic to a risk-informed and performance-based approach for regulating a spent fuel repository.

I should note that the timing and scope of NRC's final site-specific rule for Yucca Mountain and the associated Yucca Mountain Review Plan depend to a large extent on the EPA and its promulgation of final standards. Under the Energy Policy Act, we are required to conform our implementing regulations to be consistent with EPA's standard. The policy disagreements that characterize the NRC and EPA's interactions in the decommissioning area are present as well in connection with high-level waste disposal.

Let me turn now to low-level waste disposal. The low-level waste disposal program in this country is not working. With the eventual closure of the Barnwell disposal facility to States outside the Atlantic Compact, the absence of progress in other Compacts to site low-level waste disposal facilities, and with few other options, accessibility to facilities for the disposal of low-level waste could become a determining factor in whether a site can be decommissioned economically. Even if Envirocare of Utah obtains State approval for disposal of Class B and C wastes in the near future, there is still the potential that the decommissioning process for many sites will be very limited. Alternatives to disposal at a regional low-level waste disposal facility may be feasible (e.g., assured isolation; onsite disposal with restricted release; rubblization; and entombment), but all face considerable uncertainty. The costs for long-term maintenance are not insignificant and could become a factor in the economics of the alternatives to waste disposal at a low-level waste facility. Moreover, most of the alternatives have one significant weakness -- the need to provide for long-term institutional control. States or other governmental agencies may be unwilling to accept the responsibility. In addition, the reliability of institutional controls and other stewardship measures over the long-term were challenged in a recent National Academy of Sciences report.[3] Consequently, it is unclear whether these alternatives will, in the end, prove to be acceptable.

Within the limits of its regulatory authority, the Commission is considering alternatives that may address, to an extent, the lack of disposal options. In addition to considering alternatives such as "rubblization" and "entombment," the NRC recently reaffirmed that uranium recovery mills can be used for processing alternative feed material, such as material from the Formally Utilized Sites Remedial Action Program. Similarly, the Commission has voted to approve the use of mill tailings impoundments for disposal of wastes containing hazardous or toxic substances so long as the approvals of the long-term custodian and the relevant Low-Level Waste Compact are received prior to disposal. Also, because mill tailings impoundments and RCRA Subtitle C facilities can provide similar levels of public health and safety protection, we are working with the EPA to allow for deferral of EPA authority for disposal of material in these impoundments.

<u>NORM/NARM</u>

---

[3]National Research Council, Committee on the Remediation of Buried and Tank Wastes, *Long-Term Institutional Management of U.S. Department of Energy Legacy Waste Sites*: Prepublication Report, August, 2000.

I might add at this point that many of you are aware of recent discussions of the NRC investigating the possibility of gaining statutory authority for regulating Naturally Occurring and Accelerator-produced Radioactive (NARM) materials. As you know, since NARM exists virtually everywhere in the environment, such as homes, workplaces, medical institutions, and consumer products, there have been several occasions in the past when the issue has been raised as to whether the NRC should seek legislative authority to initiate a Federal regulatory program for regulating this material in a more consistent manner throughout the U.S. Also many of you are aware of remarks I made on this subject at the NRC's Regulatory Information Conference held in March, where I expressed support for the regulation of this material at a Federal level.

I am aware of State concerns about the possibility of the NRC's entry into this area and of the potential for affecting long-standing programs that many of the States established. However, I would hope that if the NRC does enter this field, that such involvement would serve to enhance and support the State's programs, especially in light of the new National Materials Program initiative. Even though many States consider these type of materials to be regulated by their general rules on radiation, some States have little or no regulation of these materials, so the NRC's involvement could serve to bring consistency among the many different programs that currently exist.

Public Confidence

Technical matters aside, the ability to achieve substantial progress in the various activities I have described depends on the level of confidence the public has in our actions. The NRC has invested substantial resources over the past several years in an effort to open the regulatory process and improve our efforts at public outreach. In the decommissioning arena, this has meant implementing a number of new activities, including broader participation in public meetings at sites undergoing decommissioning and adopting a new approach to the development of the standard review plan for decommissioning. For example, the development of the standard review plan included a series of public workshops on various review plan topics, and placement of parts of the review plan on NRC's web site so that stakeholders could participate in the developmental process. A final segment of the review plan that concerned dose assessment was placed on the web in July and the review plan is now in the process of being published as a NUREG. If any of you were involved with this effort, I would be interested in knowing how productive you believe the NRC's effort was.

A more open regulatory process is also being applied on waste disposal matters. For example, in developing its proposed rule for the possible disposal of HLW at Yucca Mountain, the NRC conducted a series of six public meetings in Nevada. Other meetings held in Nevada by the NRC have attempted to better explain our role in the HLW program. In addition, the Commission's Advisory Committee on Nuclear Waste meets annually in Nevada in order to hear stakeholder concerns. The Commission also has held public meetings on the high-visibility activities it has conducted including DOE's Viability Assessment and its Draft Environmental Impact Statement. Finally, several of my fellow Commissioners and I have traveled to Nevada to visit Yucca Mountain and interact with local stakeholders.

I believe these efforts at public outreach demonstrate the NRC's serious commitment to involve the public in our decision making process. Nonetheless, we recognize that success in decommissioning nuclear facilities is linked to our ability to demonstrate that actions taken, by both licensees and the NRC, are protective of the public health and safety. Accordingly, we will continue to stress the need to build public confidence as a key component of our decommissioning effort.

In closing let me say that the Commission is committed to the safe, cost-effective, and timely decommissioning of the nuclear facilities that it licenses. We are working with other agencies to simplify the decommissioning process and make it more predictable. We have taken seriously our obligations to provide a regulatory framework for the possible licensing of a geologic repository at Yucca Mountain and, in doing so, have defined a risk-informed regulatory framework. Working within our statutory authority, we also are seeking to define safe alternatives to the disposal of wastes at low-level waste disposal facilities. Finally, we have taken steps to open our regulatory process to allow the states, industry, and the public to aid in defining acceptable approaches to address the key issues.

Nonetheless, although progress has been made, there appears to be no near-term panacea for the challenges we confront. I believe flexibility on the part of both licensees and the NRC is needed to foster development of innovative solutions. Thank you.